



# Endometriosis: presentation to general surgeons

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**We present nine cases of endometriosis presenting to general surgeons over a period of 4.5 years at Gwynedd Hospital, Bangor. A total of 83 cases of endometriosis was found on analysis of pathology records. Of these, 73 presented to gynaecologists, one to a dermatologist and nine to general surgeons.**

The presentation to general surgeons includes swelling related to Pfannanstiel scar (two), swelling in inguinal canal (two), umbilical nodule (one), rectal bleeding (one), recurrent abdominal pain (one), mimicking ovarian tumour (one) and presenting as pelvic peritonitis (one). Six were elective admissions and three were admitted as an emergency. All were premenopausal (range 19–49 years) women. None had any previous history of endometriosis or subfertility. Two patients with cyclical symptoms were correctly diagnosed clinically, and the others were postoperative diagnosis. Six patients required gynaecological referral and four of these required further medical treatment. None of them has required further surgical intervention in follow-up (range 4 weeks to 3 years).

Endometriosis usually presents to general surgeons with deposits at extragonadal sites. Some patients may present as an emergency with abdominal pain. Endometriosis should be included in the differential diagnosis of women presenting with swellings related to umbilicus, surgical scars, inguinal canal and pelvis, especially if symptoms are cyclical. Usually, surgical excision is adequate. Selected cases require gynaecological referral and further medical therapy.

*Key words:* Endometriosis – General surgeons – Gynaecologist

The term endometriosis was first coined by Sampson in 1921.<sup>1</sup> It is characterized by the presence of functional endometrial tissue outside the uterine cavity.

The common presentation of endometriosis is in the pelvic gonadal organs. Rarely it can present to general surgeons at unusual sites including surgical scars,

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Table 1 Endometriosis: presentation at Gwynedd Hospital (1 February 1994 to 9 June 1998)

Department	No of cases	No of cases
Gynaecologist	73	
Pelvic		70
Pelvic/appendix		1
Surgical scar		2
General surgeons	9	
Surgical scar		2
Inguinal canal		2
Umbilical		1
Bleeding PR		1
Abdominal pain		3
Dermatology	1	
Umbilical		1
Total number of cases	83	83

umbilicus, inguinal canal, bowel, appendix, bladder, lung, kidney, and extremities.<sup>2</sup> Endometriosis can also present as an emergency with abdominal pain. We share our experience of nine cases of endometriosis who presented to us over four and half years.

## Patients and Methods

The data were gathered from the TELEPATH (IBM AIX Version 3.2.2 for RISC system/6000) pathology computer

system, using the List Generator programme. The search was carried out based on the SNOWMED morphology code M765\* (= wild card characters). Case records of patients who presented to general surgeons were then reviewed. A Medline assisted review of the literature was performed.

## Results

A total of 83 cases of histologically proven endometriosis was found. Of these, 73 had presented to gynaecologists, one to a dermatologist and nine to general surgeons (Tables 1 & 2). Of the nine general surgery patients, six were elective admissions and three were admitted as emergencies. All were premenopausal (range 19–49 years) women. None had any previous history of endometriosis or subfertility. Pain was the commonest symptom. All required surgical intervention and diagnosis was confirmed on histology. Six patients required gynaecological referral and four of these required further medical treatment. None of them has required further surgical intervention in follow-up (range 4 weeks to 3 years).

The two cases presenting with lesions in the Pfannenstiel's scar had intermittent, but not cyclical, symptoms. One patient who had hysterectomy 4 months previously was suspected to have a resolving haematoma on ultrasound examination. The lesion did not

Table 2 Clinical presentation to general surgeons

Patient number	Age (years)	Clinical presentation	Cyclical symptoms	Gynaecological symptoms	Previous surgery	Pre-operative diagnosis
1	32	Pain/lump scar	No	No	TAH 4 months	Resolving Haematoma
2	38	Pain/lump scar	No	No	LSCS 4 years	Suture granuloma/incisional hernia
3	41	Pain/lump (groin)	No	No	No	Femoral hernia
4	26	Pain/lump (groin)	No	Dyspareunia	No	Inguinal hernia
5	41	Pain/lump (umbilicus)	Yes	Menorrhagia	No	Endometriosis
6	45	Bleeding per rectum	Yes	Dysmenorrhea/dyspareunia	Laparoscopy	Endometriosis
7	19	Recurrent abdominal pain	No	Menorrhagia	Laparoscopy	? Cause
8	49	Pain right hypochondrium	No	No	No	Biliary colic/Ovarian carcinoma
9	46	Pain abdomen/vomiting	No	Dysmenorrhea	No	PID

TAH = total abdominal hysterectomy; LSCS = lower segment caesarean section; PID = pelvic inflammatory disease.

resolve and she underwent exploration with excision of mass at the scar site. The second case had a subcutaneous nodule which was excised. Both of them did not require any further management.

Two cases had intermittent pain and swelling in the right groin. Clinical examination did not reveal classical signs of hernia. Femoral hernia was suspected in one, and an inguinal hernia in the other. They were both explored. One had a small indirect inguinal hernia with inflamed nodular round ligament. The other patient had a direct inguinal hernia with a 2 cm cyst in the round ligament. Both underwent Lichtenstein's repair and excision of the extra peritoneal round ligament which showed endometriosis on histology. The patient with dyspareunia and postoperative discomfort in the groin required gynaecological referral. Her symptoms disappeared with 6 months of Goserelin injections.

The patient with an umbilical lesion had a classical cyclical history of pain and swelling but no bleeding. Ultra sound examination showed a normal pelvis with features suggestive of endometriosis in the cervix. Surgery was arranged during the time when she was due for her next period. Dilatation and curettage with excision of umbilicus and diagnostic laparoscopy was performed. Laparoscopy showed a few nodules in the pelvis consistent with endometriosis. She did not require any further therapy.

One patient presented with cyclical rectal bleeding. Endometriosis was suspected clinically. She underwent an examination under anaesthesia, laparoscopy and flexible sigmoidoscopy. A shelf in the pouch of Douglas was felt and, at laparoscopy, nodules of endometriosis were seen and confirmed on biopsy. Flexible sigmoidoscopy showed extrinsic compression (also suggestive on barium enema) in the mid sigmoid colon with intact normal mucosa (biopsy – normal mucosa). She subsequently required sigmoid colectomy. The resected specimen showed stenosis in the area with gross thickening of the wall due to endometriosis. She has been on danazol over the last three years and has remained well.

Three patients presented as emergencies with abdominal pain. A 19-year-old girl presented with right iliac fossa pain and vomiting. She had been extensively investigated for chronic abdominal pain since menarche by paediatricians, gynaecologists and surgeons without any definitive diagnosis. She eventually underwent repeat diagnostic laparoscopy and appendicectomy. A few reddish nodules were seen in pouch of Douglas and biopsy confirmed endometriosis. The appendix was normal. She was referred to gynaecologists and her symptoms abated on danazol. She is well at 2-years' follow-up.

A 46-year-old lady presented with features of pelvic peritonitis. She underwent exploratory laparotomy. Total abdominal hysterectomy with excision of a 4 cm degenerate cyst fixed in the pouch of Douglas was performed. Histology confirmed a fibroid uterus together with a partially gangrenous fallopian tube with extensive endometriosis. She had an uneventful recovery and required hormone replacement therapy.

A 49-year-old lady presented with features of biliary colic. The initial ultra sound scan showed gallstones along with perihepatic fluid. CT and MRI scan showed an incidental finding of a large pelvic mass with mild ascites. The fluid cytology was negative for malignancy. The CA125 was grossly raised to 7910 U/ml. The clinical impression was of ovarian carcinoma. Exploratory laparotomy revealed a pelvic mass probably arising from the ovaries with dense adhesions throughout the abdomen. Per-operative impression was of extensive endometriosis. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed and omental biopsy taken. Histology confirmed extensive endometriosis. She is well at 8-weeks' follow-up and her CA125 has fallen dramatically to 11 U/ml.

## Discussion

Endometriosis is a common gynaecological diagnosis. The usual presentations are infertility, pain (pelvic discomfort, lower abdominal pain, backache, dysmenorrhoea, and dyspareunia) and menstrual symptoms (menorrhagia, irregular menstruation or polymenorrhoea).<sup>3</sup> Extra gonadal presentations have been well described in the literature with case reports. Such unusual sites include surgical scars, umbilicus, inguinal canal, bowel, appendix, bladder, lung, kidney, and extremities.<sup>2</sup>

Endometriosis in a surgical scar is rare. It has been reported most commonly in a caesarean section scar (up to 1%)<sup>4-7</sup> and also observed in appendicectomy, episiotomy and hysterectomy scars.<sup>8</sup>

The mechanism seems to be secondary to iatrogenic transplantation of endometrium or extra-uterine decidual tissue during the procedure.<sup>9</sup> A swelling in a surgical scar, which is painful and tender especially during menstruation, is highly suggestive. It can mimic other lesions of the abdominal wall, such as haematomas, granulomas, abscesses, tumours and ventral hernias.<sup>10</sup> Wide surgical excision is advisable to prevent recurrence.<sup>9</sup>

Spread to the inguinal region by means of round ligament has been reported;<sup>3</sup> 90% of cases reported

have been on the right side.<sup>5</sup> They may be found in the inguinal lymph nodes, attached to the round ligament or concurrently with an inguinal hernia. Cyclical pain and swelling are suggestive and the correct diagnosis is made less than 50% of the time.<sup>11</sup> The differential diagnosis is usually a hernia or lymphadenitis. Cases have been reported in a hernial sac,<sup>12</sup> adjacent to a hernial sac<sup>13</sup> and in the inguinal canal with no hernia.<sup>14</sup> These cases may or may not have associated intraperitoneal endometriosis.<sup>13,14</sup> Excision of lesion with repair of hernia is the treatment of choice. The role of routine diagnostic laparoscopy in such patients is debatable. It is advisable if symptoms persist. One of our patients required further medical therapy.

Umbilical endometriosis is uncommon (up to 1% of cases).<sup>5</sup> It usually presents as cyclical umbilical pain with a blue discoloration at the time of menstruation.<sup>3</sup> The differential diagnosis includes pyrogenic granuloma and metastatic nodule. Surgical excision is the treatment of choice, as medical therapy is only partially effective.<sup>15</sup>

Intestinal involvement may be seen in 3–34 % of cases of pelvic endometriosis.<sup>16</sup> The common sites are left colon and rectum (71%), appendix (17%) and small bowel (7%).<sup>5</sup> Shinya *et al*, in a series of 2200 diagnostic colonoscopies for rectal bleeding, found two cases of endometriosis.<sup>17</sup> The disease commonly affects the serosa and sometimes invades the wall but, usually, does not involve the mucosa.<sup>16</sup> The majority of cases are asymptomatic. Large bowel involvement usually presents with cyclical bleeding, partial obstruction and abdominal pain. Conventional diagnostic methods may strengthen a pre-operative diagnosis. At colonoscopy, Shinya *et al* found irregular, granular mucosa in the sigmoid colon in their two patients, the biopsy of which was positive.<sup>17</sup> Delicata *et al*, in their four patients, did not find any mucosal abnormality and the biopsy was normal.<sup>18</sup> Endoscopy rules out any bowel cancer and should be performed during the menstrual period, when investigating a patient with cyclical rectal bleeding. Barium enema is a useful supplement to rule out any sinister pathology. Laparoscopy is useful in confirming the pelvic endometriosis and its extent. Frozen section at laparotomy is useful in evaluating indeterminate lesions.<sup>19</sup> Bowel resection is indicated if there are symptoms of obstruction or bleeding, and if malignancy cannot be excluded.<sup>20</sup> In patients of child-bearing age, resection of the involved colon followed by hormonal treatment may be sufficient;<sup>21</sup> otherwise hysterectomy and bilateral oophorectomy is the treatment of choice.<sup>19</sup>

Diagnosis of endometriosis may be delayed. Hadfield *et al* investigated the length of time between

the onset of pain symptoms and the surgical diagnosis and found a significant delay.<sup>22</sup> The young girl with recurrent episodes of pain seems to be a typical case. The diagnosis was made on second laparoscopy. Endometriosis should be included in differential diagnosis and there seems to be a role of repeat laparoscopy in these patients or performing them during a menstrual period.

Rupture of an endometriotic cyst presents an acute abdominal emergency. It should be differentiated from a ruptured ectopic pregnancy, torsion and haemorrhage into an ovarian cyst, or acute salpingitis or other causes of the acute abdomen.<sup>3</sup>

Ascites associated with endometriosis is uncommon.<sup>23</sup> It may arise from the rupture of endometrial cysts, the contents, causing irritation of peritoneal surface and consequent secretion of excessive peritoneal fluid. Previously no case has shown endometriosis presenting with CA125 level of 7910 U/ml. Medl *et al*, in their series of 71 patients, showed varying levels of CA125 (range 1–352.6 U/ml).<sup>24</sup> Myers *et al* presented a case of endometriosis with a CA125 level of 440 U/ml. Mesothelial cells staining positive for CA125 in the ascitic fluid were found. They postulate that endometriosis may have stimulated these cells to leak transudative ascitic fluid and to elevate the serum CA125 levels.<sup>25</sup> Thus endometriosis can present mimicking ovarian carcinoma. Exploratory laparotomy is indicated to provide a definitive diagnosis and correct management.<sup>25</sup>

## Conclusions

Endometriosis, although an uncommon condition in general surgery, should be included in the differential diagnosis of women presenting with swellings related to umbilicus, surgical scars, inguinal canal and pelvis, especially if symptoms are cyclical. The general surgeon may also see patients with abdominal symptoms due to pelvic endometriosis. Usually, surgical excision is adequate. Selected cases require gynaecological referral and further medical therapy.

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